



Rock River Recovery

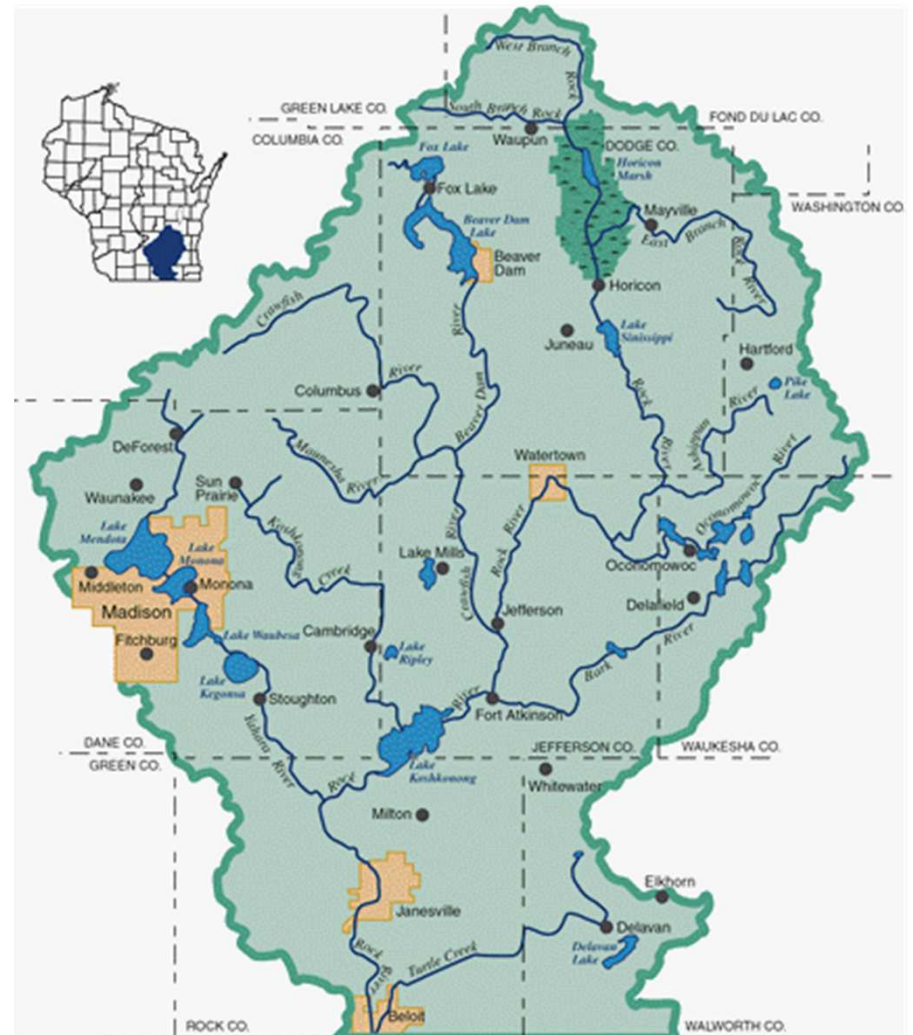
Basin Scale Water Quality Restoration





Topics

- Clean Water Act
- Impaired Waters
- TMDL
- Implementation
- Minneapolis
- RRC
- WWTF





CLEAN WATER ACT



Clean Water Act

Clean Water Act of 1972

- Amended in 1977
- Established 303(d) and TMDL in law
- NPDES focus
- 80s - 90s – lawsuits enforce TMDLs
- 2000 - 303(d) + TMDL emphasis



Clean Water Act

States must;

- Develop water quality standards
- Inventory waters that;
 - Do not meet the standards;
 - Fail to meet designated uses;
 - Impaired Water list, 303(d)
- Develop TMDLs
- Develop Restoration Plans
(Implementation)

Designated Use

- Fish & Aquatic Life
- Public Health
- Recreation
 - Boating
 - Body contact
- Drainage





Assimilative Capacity

- the ability of a body of water to receive pollutants; its capacity to receive waste waters or toxic materials without deleterious effects and without damage to aquatic life or humans who consume the water



Pollutant

Something introduced to a water body and reduces the water quality below desired levels

- Beyond natural, or background, loading
- As compared to “benchmark” waters



Pollutant

- BOD – waste water, breweries
- pH – acid, base, mining
- Nutrients – P, N, manure, leaves
- Sediment – TSS, sand, mud
- Road Salt
- Temperature – cooling water
- Toxics – road runoff, industrial
- Radioactive



IMPAIRED WATERS

What is an Impaired Water?

- Waters that do not meet designated uses
- Waters that do not meet water quality criteria





Phosphorus Criteria NR 102.06

- Rivers = 100 $\mu\text{g/L}$
- Streams = 75 $\mu\text{g/l}$
- Reservoirs
 - Stratified = 30 $\mu\text{g/l}$
 - Not Stratified = 40 $\mu\text{g/l}$
- Lakes range from 15-30 $\mu\text{g/l}$
- Exclusions
 - Ephemeral Streams
 - Wetlands
 - Lakes <5 ac



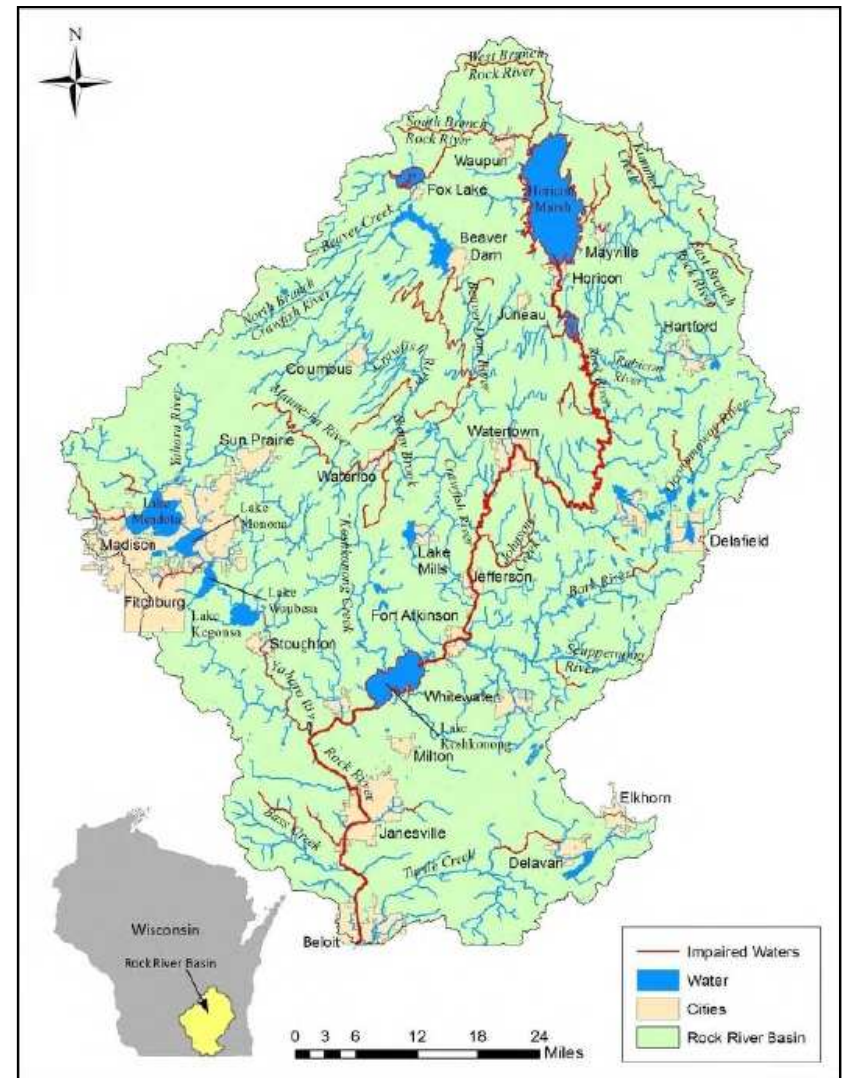


Impaired Waters List

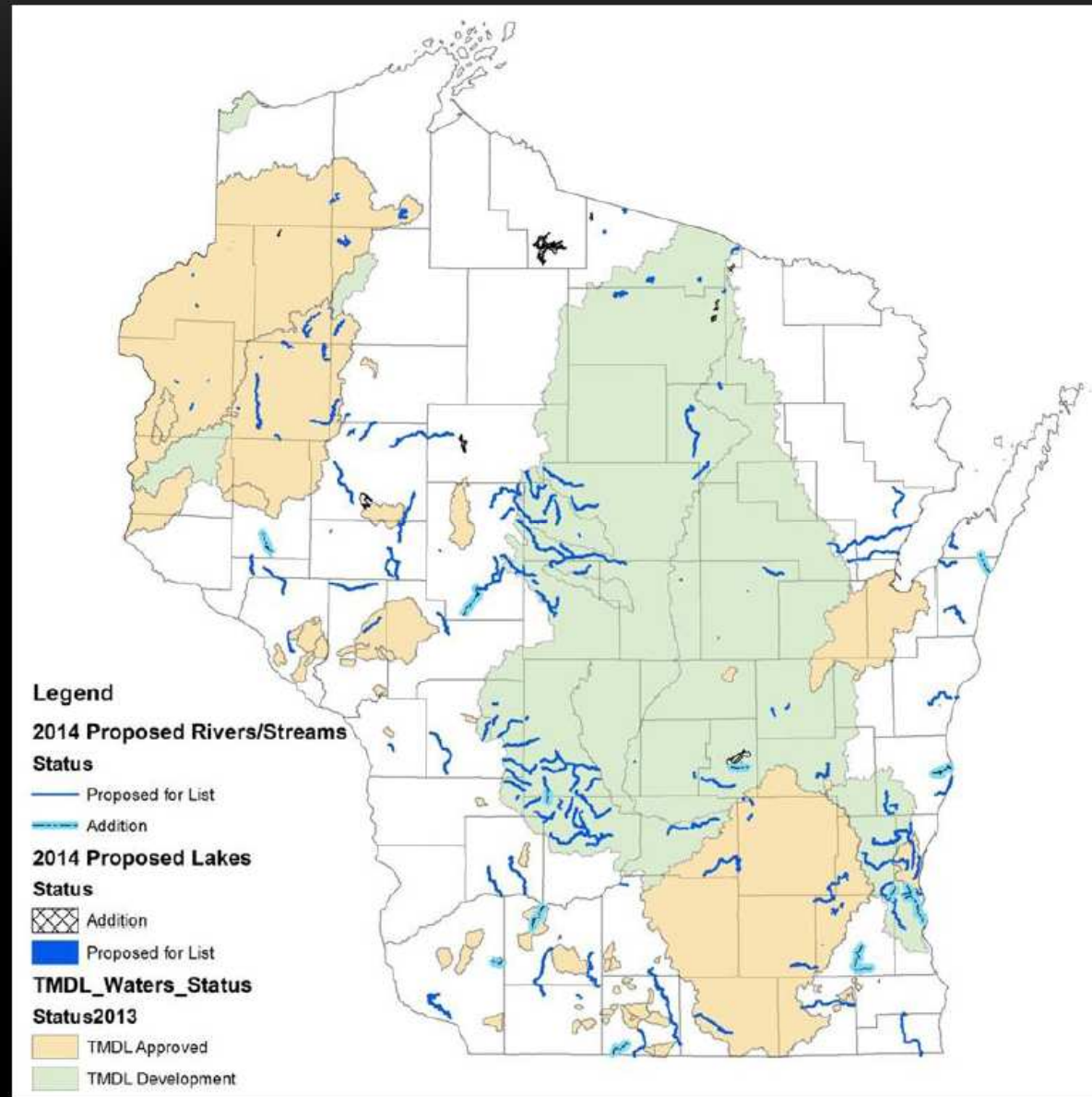
- Updated on Even-Numbered Years
- 2010 Current EPA Approved
- 2012 Under Review for Approval
- 2014 is an Update

Impaired Waters “303(d) List”

- 62 Impaired Waters (2012)
 - 20 sediment
 - 3 phosphorus
 - 39 sediment and phosphorus



NEW PHOSPHORUS LISTINGS IN TMDL AREAS





TMDL

What is a TMDL?

An honest
assessment



What are TMDLs?

The amount of a pollutant a waterbody can assimilate and still meet water quality standards

Total **M**aximum **D**aily **L**oad =

Load Allocation



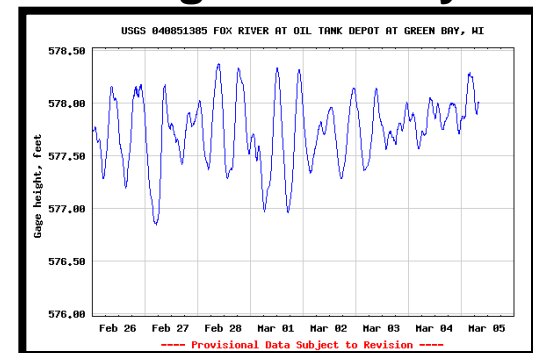
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Waste Load Allocation

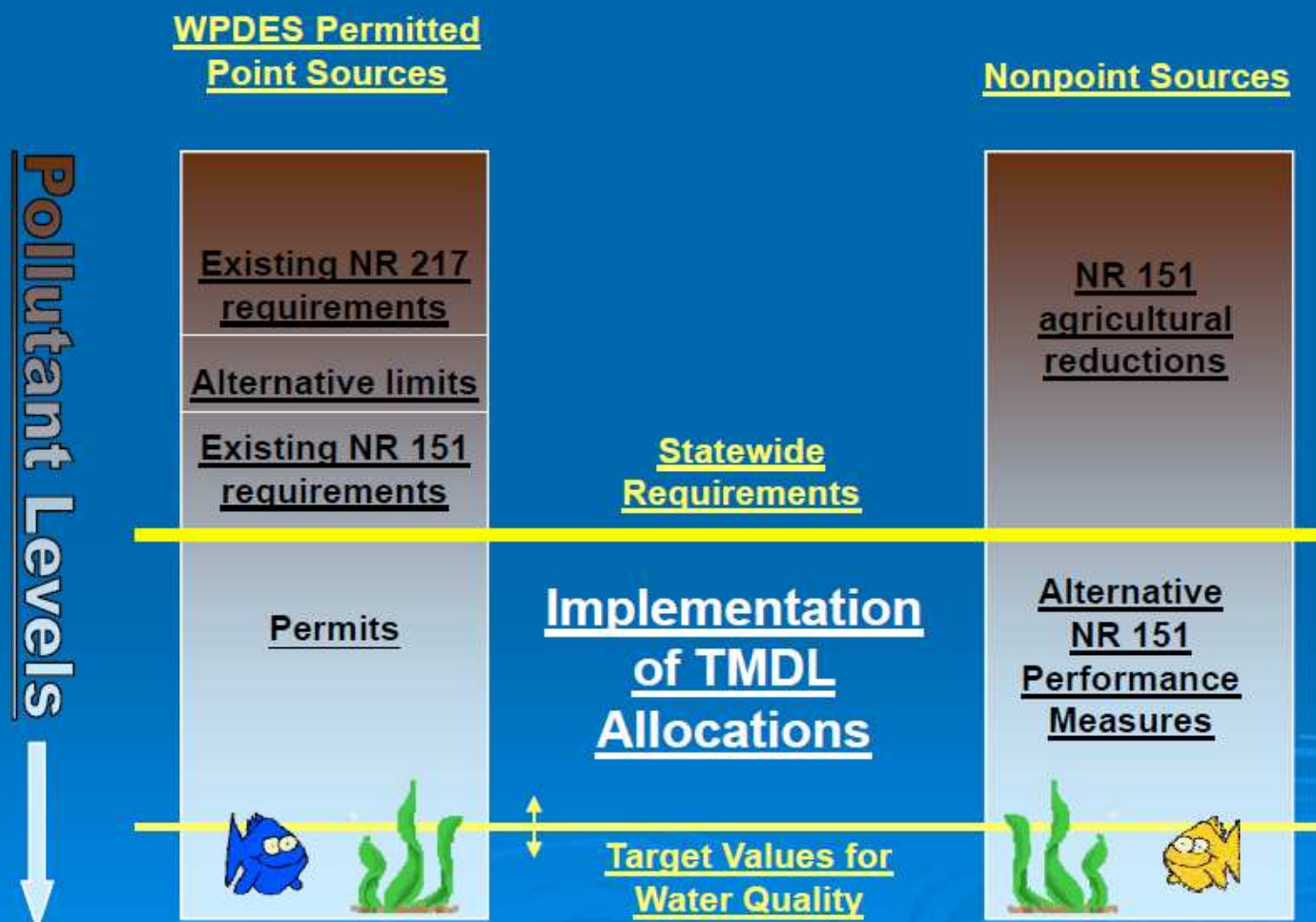


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Margin of Safety

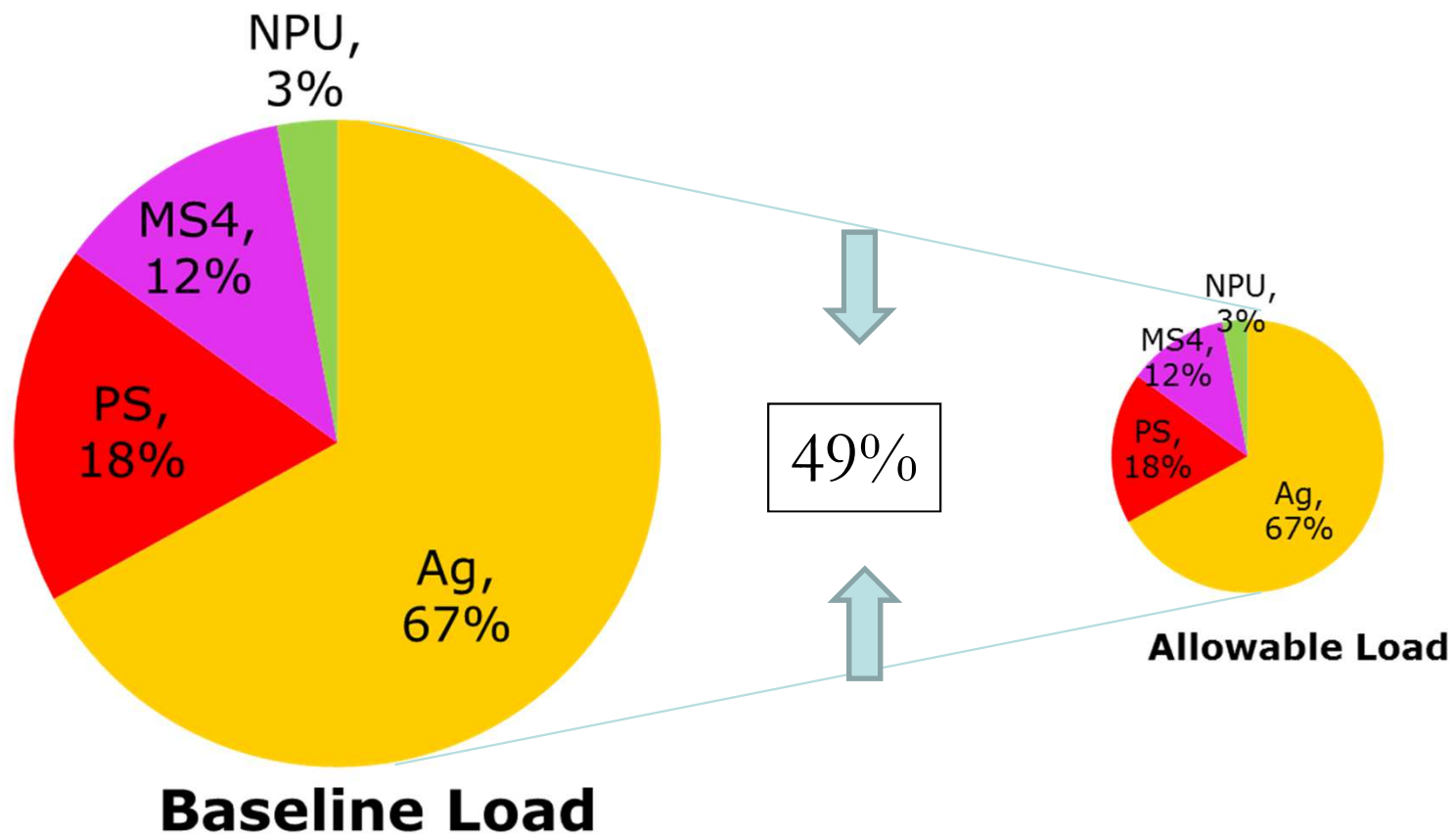


Load Reduction Approach



Allocation Approach and Baseline Loads

- Allowable loads divided proportionally





Rock River TMDL

Impaired Designated Uses

- Aquatic life / ecosystem
- Fisheries
- Water quality
- Navigation
- Recreation
- Body contact



Rock River TMDL

Phosphorus & Sediment

- Nuisance algal growth
- Oxygen depletion
- Fish kills
- Water clarity
- Degraded habitat



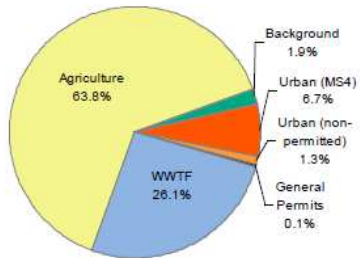
Distribution of the Allocations



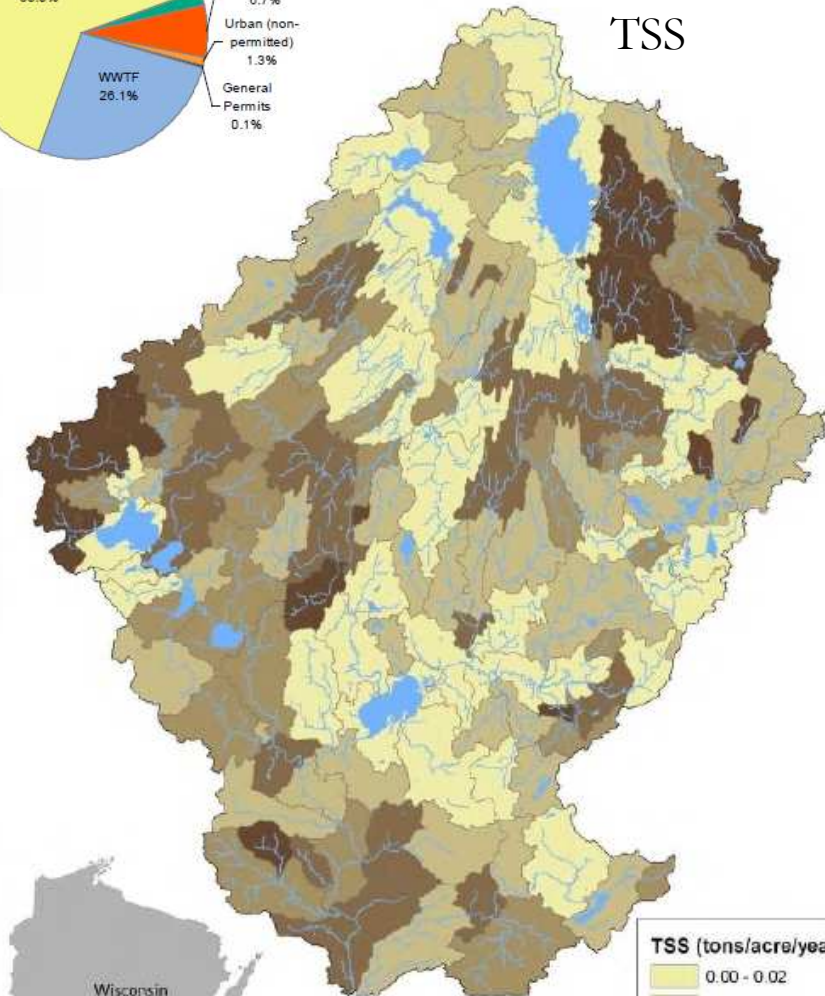
3,750 Square Miles
62% Agricultural



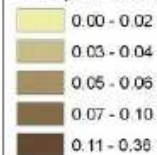
- 72 WWTP and Permitted Industries with Individual Permits
- 57 Permitted Municipalities (MS4s)
- 300+ General Industrial Permits
- CAFOs
- Construction Permits



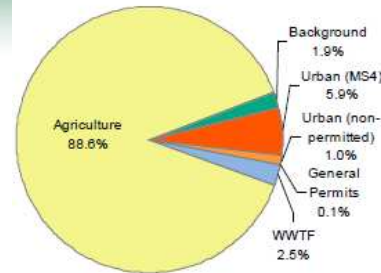
TSS



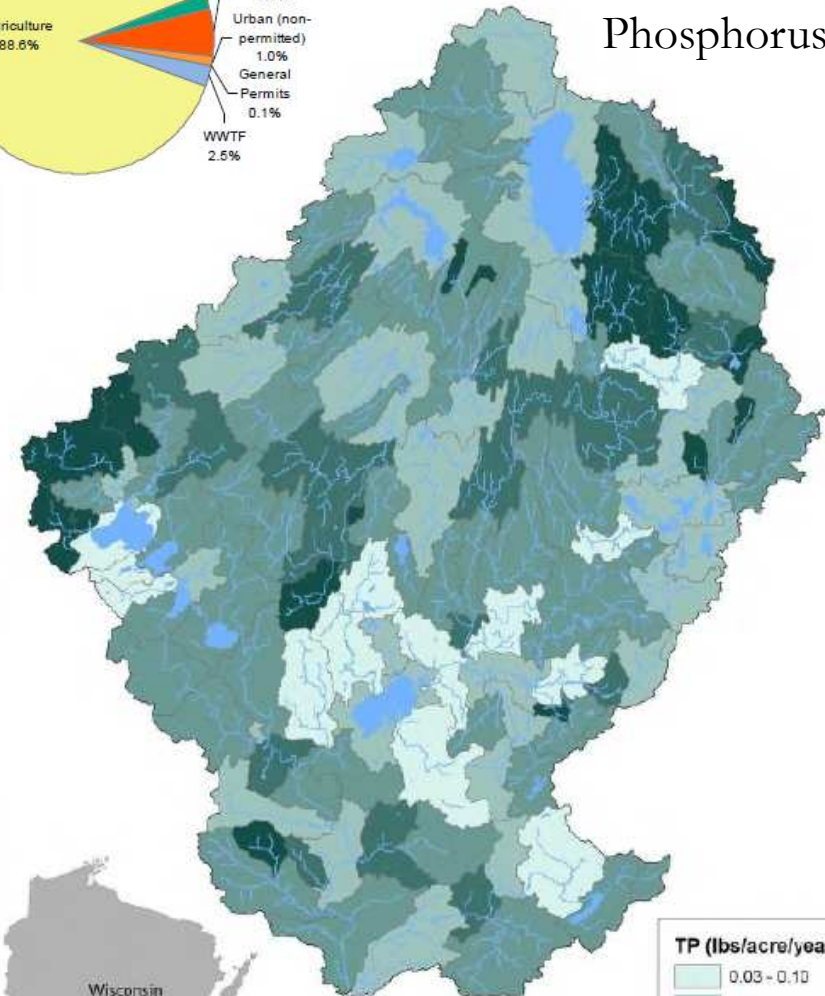
TSS (tons/acre/year)



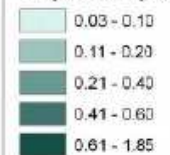
0 3 6 12 18 24 Miles



Phosphorus



TP (lbs/acre/year)



0 3 6 12 18 24 Miles



IMPLEMENTATION



DNR Roles

- Facilitation / Networking
- Champion Projects
- Permit Compliance & Technical Asst.
- Regulatory Guidance
- Trading and A.M. Plans
- Education and Information Resources
- Monitoring
- Grants



DNR Resources

Acting Coordinator– Mark Riedel

WW Supervisor – Tim Ryan

WW Engineer – Doris Thiele

Trading and A.M. – Amy Garbe

Ag. and NPS – Mike Gilbertson

Outreach and Imp. – Mark Riedel

Tools in the Tool Box

Guidance Documents

- WPDES
- P. Rule
- Trading & A.M.
- MS4
- NPS

MAPPING POTENTIALLY RESTORABLE WETLANDS IN THE ROCK RIVER BASIN



Final Report to the U.S. Environmental
Protection Agency, Region V
Wetland Grant # CD 96544501-0

August 2008



TMDL Tools in the Tool Box

- Funding Opportunities
 - USDA Environmental Quality Incentive Program
 - Targeted Runoff Management Grants (TRM)
 - EPA Section 319 Grants (9 key elements)
 - Monitoring Grants (Tiers I, II, and III)
 - Lake Management Planning Grants
 - Small Scale
 - Large Scale
 - River Grants
 - Planning Grants
 - Management Grants
- Trading
- Adaptive Management

Total Maximum Daily Loads for Total Phosphorus and Total Suspended Solids in the Rock River Basin

Columbia, Dane, Dodge, Fond du Lac, Green, Green Lake, Jefferson, Rock, Walworth, Washington, and Waukesha Counties, Wisconsin

July 2011

Prepared for:

U.S. Environmental Protection
Agency
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77 W. Jackson Blvd.
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Rock River Recovery

Implementation

- Wasteload Allocation
 - Wisconsin Pollutant Discharge Elimination System (WPDES) permit program
 - MS4, CAFO, WWTF, Industrial
- Load Allocation
 - Nonpoint Source Programs (NPS)



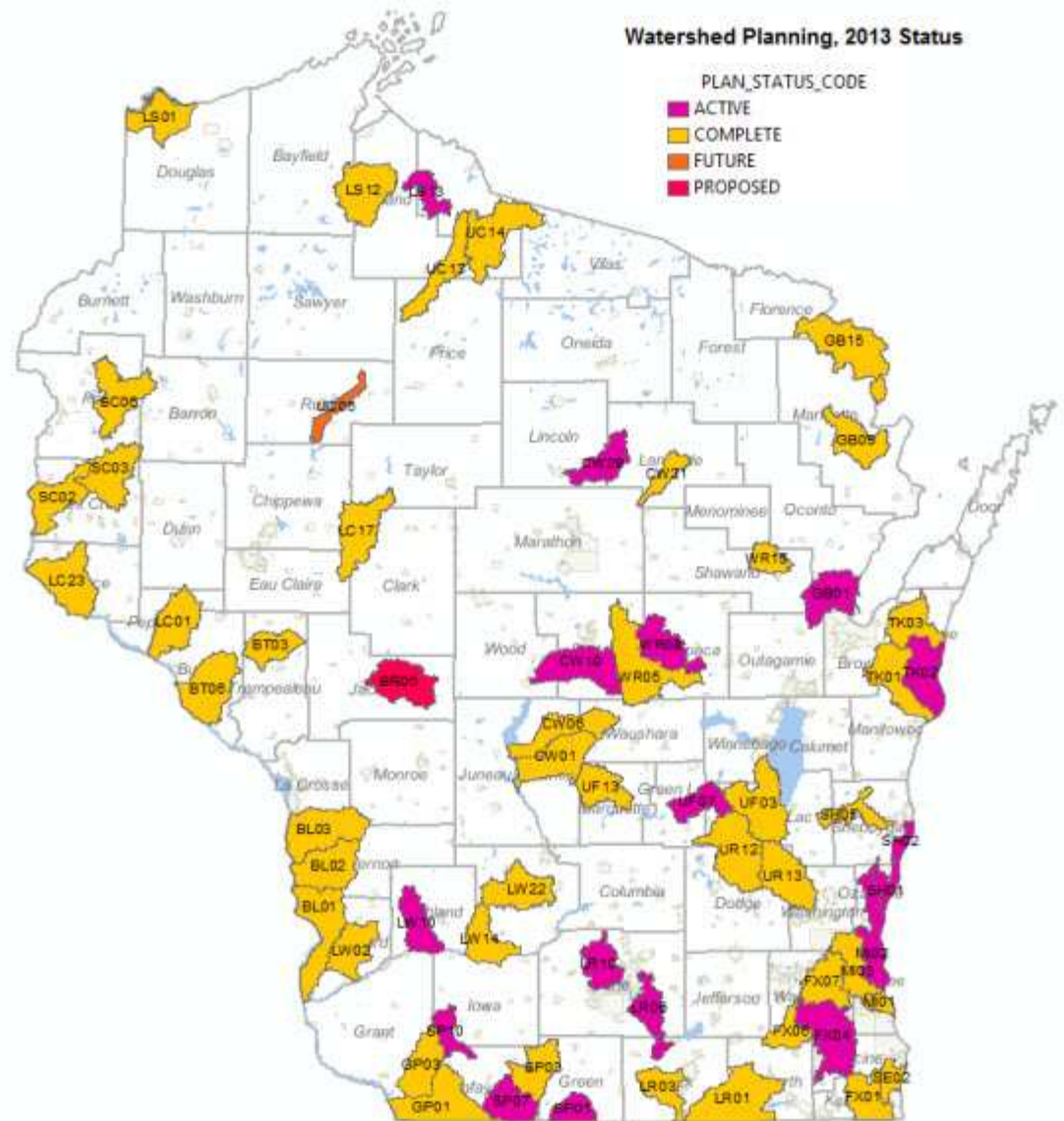
Progress So Far

Point source reductions in P

- Wastewater permits
- Urban runoff regulated under NR153
- CAFOs regulated NR243
- Ag run-off regulated NR151
 - Priority watersheds
 - Non-P fertilizer law - lawns
- Education and voluntary practices

WI DNR Watershed Projects

- Beaver Dam
- Lake Mendota
- Lake Monona
- Lake Ripley
- Rock Lake
- Spring Creek
- Turtle Creek
- Steven's Creek
- Pheasant Branch
- East Brach Rock
- Rome Pond
- + Others





Watershed Projects

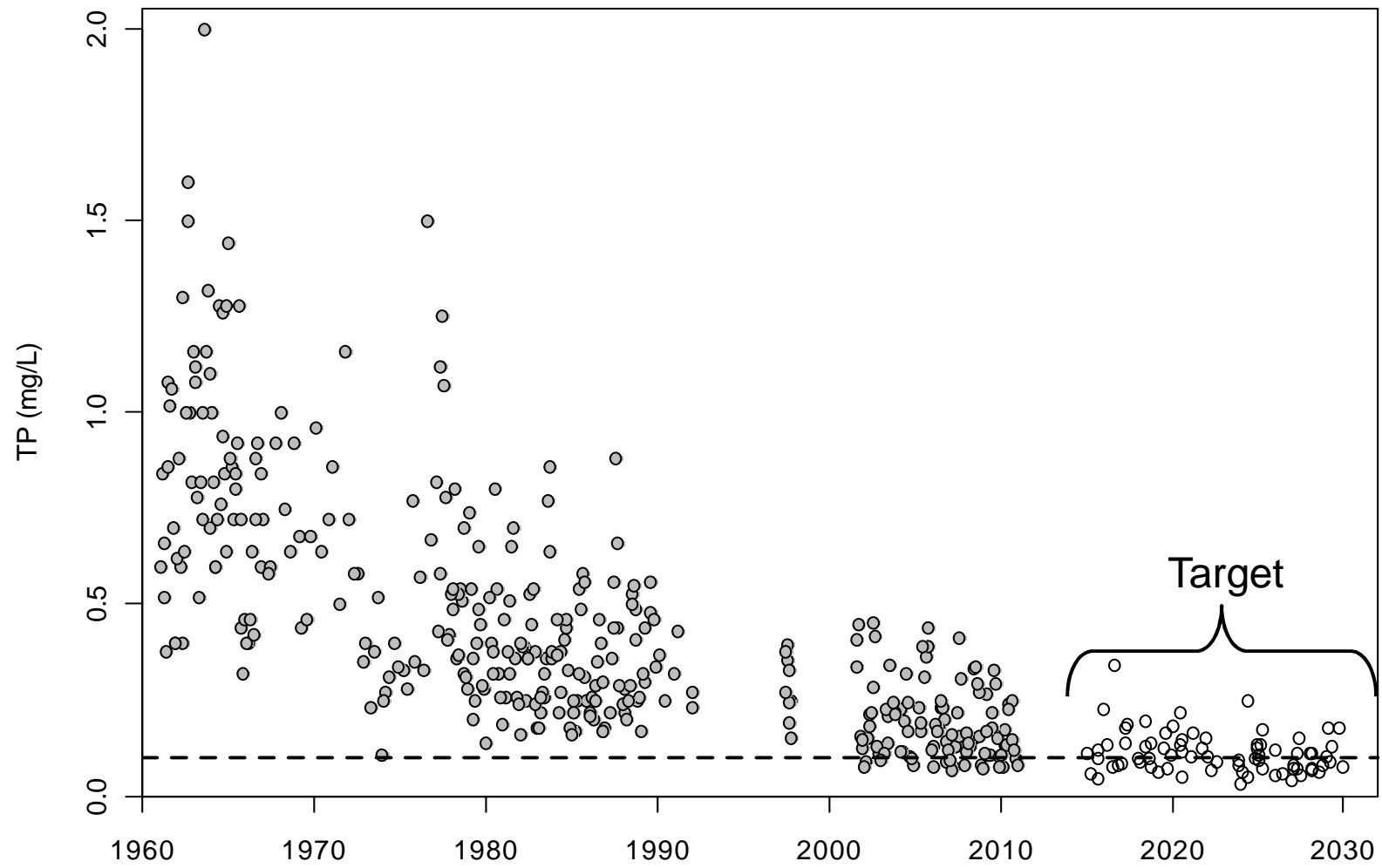
What is a Watershed Project?

- Basin vs. Watershed
 - Best Management Practices
 - Restoration
 - Remediation
 -

How do we know if a project is successful?



Rock River, Afton, WI





Watershed Restoration Projects

- Mason Creek, Oconomowoc
- Horicon Marsh
- Edgerton
- Janesville
- MMSD
 - Yahara WINS
- CLA
- Hartford

Yahara WINS-Pilot Project

Addressing Phosphorus in the Yahara Watershed
Using Wisconsin's Watershed Adaptive Management Option



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A Great Success Story

MINNEAPOLIS CHAIN OF LAKES



Minneapolis Chain of Lakes

- Nine Lakes
- Minnehaha Creek
- 5.5M Visitors Annually
- Mixed Land Use
- Diverse Interests
- Watershed Management Organization



Minneapolis Chain of Lakes

- Impaired Waters
 - Pesticides
 - Phosphorus
 - Sediment
- Designated Uses
 - Swimming
 - Recreation
 - Fisheries
 - Aquatic Life





Minneapolis Chain of Lakes

- \$12.5 Invested
- Citizen Monitoring
- Water Quality Practices
- 20+ Years
 - Phosphorus: >75 ug/l to <25 ug/l
 - Clarity: <2 ft to >4 ft



Minneapolis Chain of Lakes

How? CAN DO ATTITUDE!

- Eating an Elephant
 - Mobilized and Engaged Stakeholders
 - Political Pressure
 - Media
 - Passion
 - Ownership - Public Waters
 - This is OUR BASIN



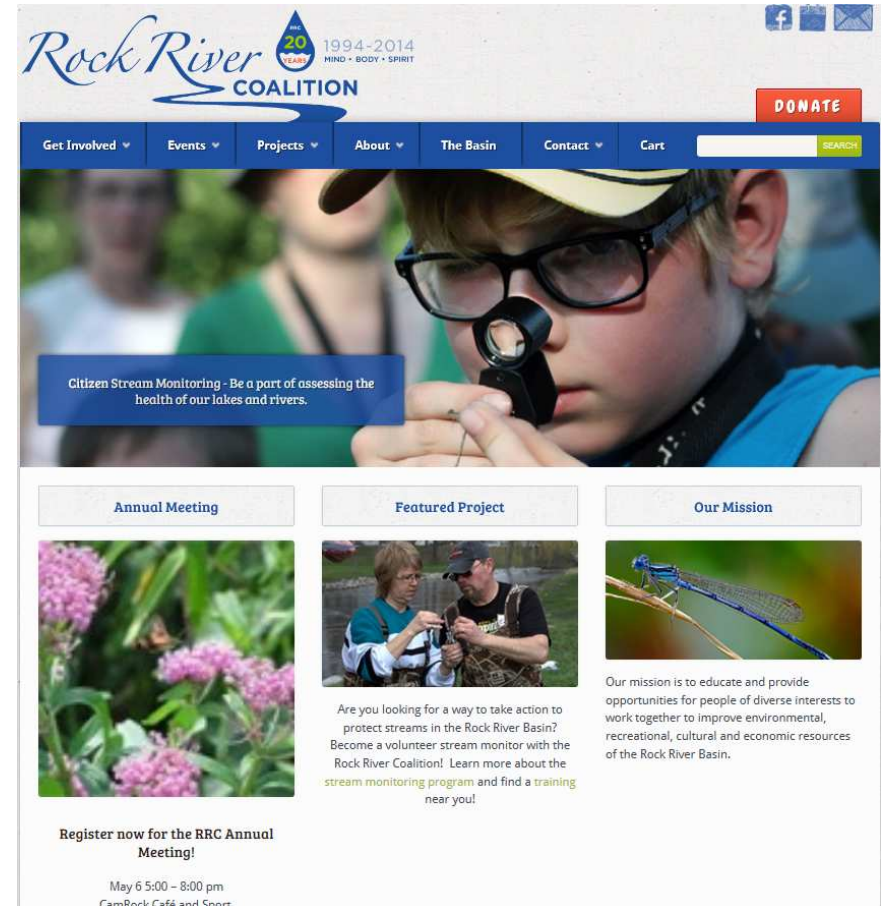
ROCK RIVER COALITION



Rock River Coalition

Recognized Basin Organization

- DNR Partner
- Networking
- Outreach/Education
- Citizen Monitoring
- **ATTENTION**
- Other Roles?
 - Grant Sponsor?
 - Projects?





Rock River Coalition

- Organizational
- Networking
- Relationships
- Ingenuity
- Legal
- Writing
- Lobbying
- Social
- Persistence

- Gardening
- Welding
- Heavy Equipment
- Trucking
- Others





Rock River Recovery



“UNLESS someone like you cares an awful lot, nothing is going to be better, It's not.”

Dr. Seuss—The Lorax